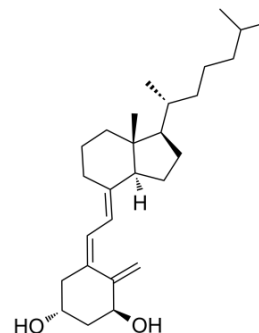


Alfacalcidol

Cat. No.:	HY-10003
CAS No.:	41294-56-8
Molecular Formula:	C ₂₇ H ₄₄ O ₂
Molecular Weight:	400.64
Target:	VD/VDR
Pathway:	Vitamin D Related
Storage:	4°C, protect from light, stored under nitrogen * The compound is unstable in solutions, freshly prepared is recommended.



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 50 mg/mL (124.80 mM)
* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	2.4960 mL	12.4800 mL	24.9601 mL
	5 mM	0.4992 mL	2.4960 mL	4.9920 mL
	10 mM	0.2496 mL	1.2480 mL	2.4960 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 2.5 mg/mL (6.24 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: 2.5 mg/mL (6.24 mM); Suspended solution; Need ultrasonic
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.5 mg/mL (6.24 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Alfacalcidol (1-hydroxycholecalciferol) is a vitamin D active metabolites, acts as a non-selective VDR activator medication, and widely be used in the management of osteoporosis^{[1][2][3][4]}.

IC₅₀ & Target

VDR^[2]

In Vivo

Alfacalcidol (0.025-0.1 mg/kg; p.o.; five times a week; for 3 months) exerts bone-protective effects independently of its Ca-related effects, and is in this respect superior to vitamin D(3), and that the skeletal actions of alfacalcidol take place, at least in part, independently of suppression of PTH^[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Female Wistar-Imamichi rats (8 months old), ovariectomized ^[3]
Dosage:	0.025 mg/kg, 0.05 mg/kg, 0.1 mg/kg
Administration:	Oral administration; five times a week; for 3 months
Result:	Exerted bone-protective effects independently of its Ca-related effects

CUSTOMER VALIDATION

- Int J Mol Sci. 2017 Dec 19;18(12). pii: E2764.
- Chinese Journal of Animal Nutrition. 2013, 25(8): 1752-1761.

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REFERENCES

- [1]. Galeşanu C, et al. [Postmenopausal osteoporosis. Digital Rx radiogrammetry in the diagnosis and follow-up of treatment with alfacalcidol]. Rev Med Chir Soc Med Nat Iasi. 2006 Oct-Dec;110(4):833-41.
- [2]. Nuijten M, et al. Cost Effectiveness of Paricalcitol versus a Non-Selective Vitamin D Receptor Activator for Secondary Hyperparathyroidism in the UK. Clin Drug Investig. 2010;30(8):545-57.
- [3]. Shiraishi A, et al. The advantage of alfacalcidol over vitamin D in the treatment of osteoporosis. Calcif Tissue Int. 1999 Oct;65(4):311-6.
- [4]. Nagaoka H, et al. Alfacalcidol enhances collagen quality in ovariectomized rat bones. J Orthop Res. 2014 Aug;32(8):1030-6.

Caution: Product has not been fully validated for medical applications. For research use only.

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